

Federal Communications Commission

(REFERENCE COPY - Not for submission)

FCC Form 399: Reimbursement Request

Facility ID: File	8688 S	Service: DTV	Call Sign:	WRAL-TV	Channel: 17 (UHF)
Number:	000002	1001			
FRN: 00	01961713	Date	02/17		
		Submitted:	/2020		

Applicant Name, Type, and Contact Information

Applicant Information

Applicant	Address	Phone	Email	Applicant Type
Capitol Broadcasting Company, Inc.	Chrissy Cicuto 2619 Western Blvd Raleigh, NC 27606 United States	+1 (919) 821-8730	ccicuto@cbc- raleigh.com	Corporation

Reimbursement Contact Name and Information Reimbursement Contact Information

Applicant	Address	Phone	Email
[Confidential]			

Preparer Preparer Contact Name and Information

Contact Information	Applicant	Address	Phone	Email
	Peter Sockett Director of Engineering and Operations Capitol Broadcasting Company	Pete Sockett 2619 Western Blvd Raleigh, NC 27606 United States	+1 (919) 821- 8573	psockett@wral. com

Broadcaster	Question	Response
Information and Transition Plan	Will the station be sharing equipment with another broadcast television station or stations (e.g., a shared antenna, co-location on a tower, use of the same transmitter room, multiple transmitters feeding a combiner, etc.)? If yes, enter the facility ID's of the other stations and click 'prefill' to download those stations' licensing information.	Yes
	Briefly describe transition plan	All 4 broadcasters will need to replace antennas on the candelabra. The transition plan for WRAL / WRAZ is to replace the existing Aux antenna with a single ch15 / 17 slot antenna at approx 1720ft (524m) to use as both the new AUX and interim facility.

Transmitters	Section	Question	Response
	Transmitter Related Expenses	Do you have transmitter related expenses?	Yes

Primary	Existing Transmitter Information				
Transmitter	Section	Question	Response		
	Existing Transmitter Description	Type of change	Purchase New		
		Use	Primary (Main)		
		Description of Use	N/A		
		Ownership	Owned		
		Owner	N/A		
		Site	N/A		
		Is this transmitter currently shared with another station?	No		
		Is this transmitter currently in operating condition?	Yes		
	Existing Transmitter	Manufacturer			
	Manufacturer and Type	Model	CD2400P4		
		Year	1999		
		Туре	Inductive Output Tube		
		IOT Power Type	Other		
		Other IOT Power Type	4 tube system		
		Power Capacity	100 kW		

Primary	New Transmitter Costs				
Transmitter	Section	Question	Response		
	New Transmitter	Use	Primary (Main)		
		Change Type	Purchase New		
		Is this a request for upgraded equipment?	Yes		
		Manufacturer			
		Model	ULXTED-120		
		Transmitter Type	Solid State		
		Solid State Cooling	Liquid Cooled		
		Solid State Power capacity	76.0 kW		
		Justification for New Transmitter	 Manufacturer (Gates Air) will not support channel changes to this model of transmitter. 2) Comark estimate for IOT transmitter is higher than a solid State transmitter from GatesAir 		

Primary	Other Transmitter Costs		Response
Transmitter	Section	Question	Response
	Electrical Service	Service Entrance (3 phases 800A 208V)	No
		Switchgear (industrial 800 amp)	No
		Transformer (480V)	Yes

	Power	300 kVA
	Rigid Conduit and Wiring	Yes
	Size	4 inches
	Length	400.0 feet
	Other Electrical Service	No
	Description	N/A
HVAC Service	Does the replacement transmitter require HVAC Service?	Yes
	Туре	Cooling Only
	Size	15 tons
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leashold improvement?	Yes
	Size	1600.0 square feet
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

Primary Transmitter	Other Transmitter Cost Not Listed			
	Name	Description		
	RF System	Magic T / Mask filter / Dummy load and RF Line for Installation		
	System installation	Manufacturer to come to site to install and commission.		
	Spare Modules and Power supplies	Currently we keep 1 spare IOT tube on hand in the event of a failure. This purchases spare parts for Solid State TX		

Antennas Section		Question	Response
Antenna Rela	ated Expenses	Do you have antenna related expenses?	Yes

Auxiliary	Existing Antenna Information			
Antenna	Section	Question	Response	
	Existing Antenna Description	Type of change	Purchase New	
		Antenna Use	Auxiliary (Backup)	
		Description of Use	Auxilary (Backup)	
		Ownership	Owned	
		Owner	N/A	
		Site	N/A	
		Is the existing antenna shared with another station or stations?	Yes	
		Is the existing antenna directional?	Yes	
		Is antenna in operating condition?	Yes	
		Is antenna located on or in close proximity to an antenna farm?	Yes	
	Existing Antenna Manufacturer and Type	Class	Full Power	
		Mounting	Side Mount	
		Antenna position in stack	Not in Stack	
		Polarization	Horizontal	
		Туре	Broadband Panel	
		Number of Stations Supported	2	
		Number of Panels	36	
		Design power capacity in use	100.0 %	
		Lower Limit	674.00 MHz	
		Upper Limit	710.00 MHz	
		Other Antenna Type	N/A	
		ERP: (Effective Radiated Power)	1000.0 kW	

Manufacturer	
Model	ETU- P3H12-(48- 53)
Year	2008

Facility ID's and Call Signs of all stations with whom the antenna is shared.

Facility ID	Call Sign
64611	WRAZ

Auxiliary	New Antenna Costs			
Antenna	Section	Question	Response	
	New Antenna Description	Use	Auxiliary (Backup)	
		Description of Use	Interim Facility and Auxiliary (Backup)	
		Change Type	Purchase New	
		Is this a request for upgraded equipment?	No	
		Ownership	Owned	
		Owner	N/A	
		Is antenna shared?	Yes	
		Is antenna directional?	No	
		Will antenna be located on or in close proximity to an antenna farm?	Yes	
	New Antenna Manufacturer and Types	Class	Full Power	
		Mounting	Side Mount	
		Antenna position in stack	Not in Stack	
		Polarization	Elliptical	
		Туре	Slotted Coaxial	
		Number of Stations Supported	N/A	
		Number of Panels/Bays	N/A	
		Lower Limit	N/A	
		Upper Limit	N/A	
		Design power capacity in use	N/A	
		Other Antenna Type	N/A	
		ERP: (Effective Radiated Power)	805.0 kW	

Manufacturer
Model
Year
Justification for New Antenna

Auxiliary Other Antenna Costs

Antenna

s	Section	Question	Response
	Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	Yes
		Туре	New
		Number of channels supported	2
		Frequencies of channels supported	Upper and lower frequency
		Frequency	476.0 MHz - 494.0 MHz
		Do you need a combiner output splitter /switcher for dual feed lines?	No
E	Elbow Complex	Do you require the separate purchase of the Elbow Complex?	Yes

	Broadband or Single Channel?	Broadband
	Feed Line Size	8 3/16 inches inches
Side Mount Brackets	Do you require the separate purchase of side mount brackets for a high power antenna?	Yes
Pattern Scatter Analysis	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	Yes
Sweep Test	Do you require the sweep testing of transmission line and antenna?	Yes

Auxiliary Other Antenna Cost Not Listed

Antenna Information not provided.

Primary	Existing Antenna Information			
Antenna	Section	Question	Response	
	Existing Antenna Description	Type of change	Purchase New	
		Antenna Use	Primary (Main)	
		Description of Use	N/A	
		Ownership	Owned	
		Owner	N/A	
		Site	N/A	
		Is the existing antenna shared with another station or stations?	No	
		Is the existing antenna directional?	No	
		Is antenna in operating condition?	Yes	
		Is antenna located on or in close proximity to an antenna farm?	Yes	
	Existing Antenna	Class	Full Power	
	Manufacturer and Type	Mounting	Top Mount	
		Antenna position in stack	Тор	
		Polarization	Elliptical	
		Туре	Slotted Coaxial	
		Number of Stations Supported	N/A	
		Number of Panels	N/A	
		Design power capacity in use	N/A	
		Lower Limit	N/A	
		Upper Limit	N/A	
		Other Antenna Type	N/A	
		ERP: (Effective Radiated Power)	1000.0 kW	

Manufacturer	
Model	ATW25H5- ETO-48H
Year	2008

Primary	New Antenna Costs			
Antenna	Section	Question	Response	
	New Antenna Description	Use	Primary (Main)	
		Description of Use	N/A	
		Change Type	Purchase New	
		Is this a request for upgraded equipment?	No	
		Ownership	Owned	
		Owner	N/A	
		Is antenna shared?	No	
		Is antenna directional?	No	
		Will antenna be located on or in close proximity to an antenna farm?	Yes	
	New Antenna Manufacturer and Types	Class	Full Power	
		Mounting	Top Mount	
		Antenna position in stack	Тор	
		Polarization	Elliptical	
		Туре	Slotted Coaxial	
		Number of Stations Supported	N/A	
		Number of Panels/Bays	N/A	
		Lower Limit	N/A	
		Upper Limit	N/A	
		Design power capacity in use	N/A	
		Other Antenna Type	N/A	
		ERP: (Effective Radiated Power)	533.0 kW	
		Manufacturer		

Model	ATW25H4- ETO-17H
Year	2018
Justification for New Antenna	Required as old antenna is cut for channel 48

Primary Antenna Section Question Response **Combiner for Shared** Do you need a Combiner for a Shared Antenna? Antenna Type Number of channels supported N/A Frequencies of channels supported N/A Frequency N/A Do you need a combiner output splitter N/A /switcher for dual feed lines? **Elbow Complex** Do you require the separate purchase of Yes the Elbow Complex? Broadband or Single Channel? Single Channel Feed Line Size 7 3/16 inches inches Side Mount Brackets Do you require the separate purchase of side mount brackets for a high power antenna? **Pattern Scatter Analysis** Do you require separate purchase of No pattern scatter analysis for a side mount high or medium power antenna? Yes **Sweep Test** Do you require the sweep testing of transmission line and antenna?

Other Antenna Costs

PrimaryOther Antenna Cost Not ListedAntennaInformation not provided.

Transmissior	n Seffien	Question	Response
	Transmission Line Related Expenses	Do you have transmission line related expenses?	Yes

ransmissio	Section	Question	Response
Existing Transmission Line Description		Type of change	Purchase New
		Use	Auxiliary (Backup)
		Description of Use	Auxiliary (Backup)
		Ownership	Owned
		Owner	N/A
		Site	N/A
		Is the existing transmission line shared with another station or stations?	Yes
		Is Transmission Line in operating condition?	Yes
	Existing Transmission Line Manufacturer and Type	Manufacturer	
		Туре	Rigid
		Diameter	7 3/16 inches
		Other Diameter	N/A
		Segment Length	20 inches
		Other Segment Length	N/A
		Number of parallel runs	1
		Length	1738 feet per run

Auxiliary Existing Transmission Line

Facility ID's and Call Signs of all stations with whom the transmission line is shared.

Facility ID	Call Sign
64611	WRAZ

Transmissio	Section	Question	Response
	New Transmission Line Costs	Use	Auxiliary (Backup)
		Description of Use	Auxiliary (Backup) and Interim Facility
		Change Type	Purchase New
		Is this a request for upgraded equipment?	No
		Туре	Rigid
		Diameter	8 3/16 inches
		Other Diameter	N/A
		Segment Length	Broadband
		Other Segment Length	N/A
		Number of parallel runs	1
		Length	2013 feet per run
		Justification for New Transmission Line	Required to feed new Aux / Interim antenna. Cost will be split with WRAZ.

Auxiliary Other Transmission Line Expenses Not Listed Transmission

Primary	Existing Transmission Line		
	on Line Section	Question	Response
	Existing Transmission Line Description	Type of change	Purchase New
		Use	Primary (Main)
		Description of Use	N/A
		Ownership	Owned
		Owner	N/A
		Site	N/A
		Is the existing transmission line shared with another station or stations?	No
		Is Transmission Line in operating condition?	Yes
	Existing Transmission Line Manufacturer and Type	Manufacturer	
		Туре	Waveguide
		Diameter	N/A
		Other Diameter	N/A
		Segment Length	N/A
		Other Segment Length	N/A
		Number of parallel runs	1
		Length	2210 feet per run

Existing Transmission Line

Primary	New Transmission Line		
Transmissio	n Line Section	Question	Response
	New Transmission Line Costs	Use	Primary (Main)
		Description of Use	N/A
		Change Type	Purchase New
		Is this a request for upgraded equipment?	No
		Туре	Rigid
		Diameter	7 3/16 inches
		Other Diameter	N/A
		Segment Length	19 1/2 inches
		Other Segment Length	N/A
		Number of parallel runs	1
		Length	2210 feet per run
		Justification for New Transmission Line	Existing run is GLW 1500 Waveguide that is frequency specific for High Band UHF

Other Transmission Line Expenses Not Listed			
Transmissio	n Line	Description	
	Gas Barrier	The transmission line Gas Barrier enables the transmission line to be pressurized.	

2 Wall feed through units	The two listed wall feed thru units are for
	the transmission line as it goes through the wall to the outside of the transmitter building.

Tower	Section	Question	Response
Equipment And Rigging Costs	Tower Equipment or Rigging Costs Changes	Do you have tower equipment or rigging costs changes?	Yes

Primary Tower	Section	Question	Response
	Existing Tower Description	Type of change	Modify Existing
		Tower Use	Primary (Main)
		Description of Use	N/A
		Ownership	Owned
		Is this tower consider Complex?	Candelabra
		Is this tower currently shared with any other stations?	Yes
		One or more FM, AM or TV radio broadcaster(s)	Yes
		Others Types of Users	No
		Is tower documented for structural analysis?	Yes
		Is tower compliant with Rev G?	Yes
	Existing Tower Structure Registration	Do you have a tower registration number?	Yes
		ASR Number	1027322
	Coordinates (NAD83 (North American Datum of 1983))	Latitude (NAD83)	35° 40' 29.0" N-
		Longitude (NAD83)	078° 31' 39.0" W-
		Overall Structure Height	1988.82 fee
		Support Structure Height	1988.82 fee
		Ground Elevation Above Mean Sea Level (AMSL)	359.90 feet

Structure Type	TOWER - Free Standing or Guyed Structure
Tower Owner	CBC REAL ESTATE COMPANY, INC.
Date Constructed	03/23/2000

FM, AM or TV radio broadcasters. Facility ID's, Call Signs and Services of other broadcast stations with whom the tower is shared

Facility ID	Call Sign	Service
73936	WTKK	FM
50782	WNCN	DTV
73205	WLFL	DTV
64611	WRAZ	DTV

Primary Tower Modification Costs

Tower

,	Section	Question	Response
	Engineering Study	Please what type of engineering study is required, if any:	Study needed for tower with candelabra
	Tower Reinforcements	Please select whether tower reinforcements are needed:	Minor Reinforcements needed

Primary Tower Rigging Costs

Tower	Section	Question	Response
	Tower Rigging Costs	Complex Tower	Candelabra

Helicopter Services	Are helicopter services required?	Yes
Required		

Primary	Other Tower Expenses Not Listed				
Tower	Name	Description			
	Relocate ENG Dish	Relocate 2 ENG receive dishes to create room for Interim / Aux antennas - Split with WRAZ			

Outside	Section	Question	Response
Professional	Services Costs Outside Project Management Services	Do you require outside project management services?	Yes
		Number of Hours	220
		Explanation	WRAL /WRAZ has only one engineer currently available at the TX site. Additional project management is necessary. The estimate is an average of 20 hrs per month for Jan - November of 2019. Note: post Phase 5 the candelabra still needs to be rebuilt.
	Outside RF consulting Engineering Services	Perform engineering study for new channel assignment and antenna development	Yes
		Prepare engineering section of Form FCC Construction Permit Application	Yes
		For Auxiliary Facility	Yes
		For Main Facility	Yes
		Prepare engineering section of Form FCC License to Cover Application	Yes
		For Auxiliary Facility	Yes
		For Main Facility	Yes
		Prepare request for Special Temporary Authority	No

	Quantity	N/A
	Do you have Distributed Transmission System engineering services?	N/A
	Critical Facility	N/A
	Terrain-Shielded Facility	N/A
Attorney and Other Outside Consulting	Prepare and file Form FCC Construction Permit Application	Yes
Services	For Auxiliary Facility	Yes
	For Main Facility	Yes
	Prepare and file Form FCC License to Cover Application	Yes
	For Auxiliary Facility	Yes
	For Main Facility	Yes
	Prepare request for Special Temporary Authority	No
	Quantity	N/A
	NEPA Section 106 environmental review	No
	Environmental Assessment	No
	ASR Modification	Yes
	FAA Consultation (including preparation of FAA Form 7460)	No
	Negotiation of Lease and other Matter for Shared Locations	No
	Prepare or Review FCC Form 399 for Reimbursement	Yes
	Address transition timing and coordination issues w/ other stations and wireless providers	Yes
RF Field Engineering Services	Comprehensive coverage verification via field study	Yes
	RF exposure measurements	Yes
	Additional Field Engineering Service	Yes

Number of Days	3
Justification	Independent verification and inspection of installed systems

Outside Other Professional Services Expenses Not Listed

Professional	Services Costs	Description	
	Legal Guidance for repack	Consultation on repack items with Legal Council	

Other	Section	Question	Response
Expenses	AM Pattern Disturbance	Is an Impact Study needed?	No
		Is Remediation needed?	No
	Facility Expenses	Name	N/A
		Other Distributed Transmission System Expenses Not listed	N/A
		Name	N/A
		Is Notification of a Medical Facility required as a result of DTV broadcasting?	Yes
	Permit and Filing Costs	Local Zoning	Yes
		Non-zoning permits	Yes
		BLM or NFS Coordination	No
		FCC Construction Permit Minor Change	No
		FCC License to Cover Application	Yes
		FCC Special Temporary Authority Application	No
	Other Miscellaneous Expenses	Does this relocation require paying Disposal Costs (for equipment and other waste, net of any salvage value)?	Yes
		Does this relocation require Equipment Delivery or Handling Charges not otherwise included in individual item costs?	Yes
		Does this relocation require Equipment Storage?	No
		Does this relocation require the Development and Airing of an Announcement regarding an upcoming channel change?	Yes
		Does this relocation require MVPD Notification of a Channel Change?	Yes

Other Expenses Not Listed

Other	Other Expenses Not Listed			
Expenses	Name	Description		
	Facilty remote control and monitoing modifications	Modifications to existing system to add new telemetry and control.		

Transmitters

Cost Information

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Transmitter ULXTED-120	\$3,247,975.00	\$3,114,978.00		\$2,974,563.24	
Other Building Addition Size: 1600.0	\$867,639.00	\$867,639.00	Our facility is full with no room to install new equipment before old equipment is removed. This facility will be shared with WRAZ. This is 1/2 the cost, other half will be represented on WRAZ. Please see "building cost narrative" recently uploaded.	\$762,229.59	New estimate was uploaded April 18th for approval.
Spare Modules and Power supplies	\$35,000.00	\$35,000.00	N/A	N/A	N/A
System installation	\$1.00	\$1.00	Included in overall TX price	N/A	N/A
15 Ton system	\$55,800.00	\$1.00	Included in overall building estimate	N/A	N/A

4" Rigid Conduit and Wiring (Cost per foot)	\$40,400.00	\$1.00	Included in overall building estimate	N/A	N/A
Transformer 3 phase /480v - 300 KVA	\$36,800.00	\$1.00	Included in overall TX price	N/A	N/A
UHF - Liquid Cooled Solid State Transmitter 76.0 kW	\$2,212,334.00	\$2,212,334.00	Includes all TX cost - RF System, installation and electrical (transformer). Freight Charges Also	\$2,212,333.65	N/A
RF System	\$1.00	\$1.00	Included in overall TX price	N/A	N/A
Sub-total	\$3,247,975.00	\$3,114,978.00	N/A	\$2,974,563.24	N/A
Total for all systems	\$6,496,452.65	\$6,034,989.65	N/A	\$5,263,243.83	N/A

Components

Actual Information Description	File Name	
Other Building Addition Size: 1600.0	Component Description:	WRAL portion of ITS Invoice WRAL- WRAZ-006
	Amount:	\$38,250.00

Component Description: Amount:	1/2 of cost for equipment racks for new transmitter. Total invoice amount is split between WRAL and WRAZ \$8,538.42
Component Description: Amount:	WRAL Portion of Osborn Invoice 27973 \$5,111.98
Component Description: Amount:	WRAL portion of ITS invoice WRAL- WRAZ-008 \$48,892.50
Component Description: Amount:	12-09-19 Osborn invoice 32586 for printing related to the WRAL new building addition. \$40.30
Component Description: Amount:	WRAL Portion of Osborn Invoice 29157 \$933.70
Component Description: Amount:	WRAL portion of ITS Invoice WRAL- WRAZ-007 \$48,375.00
Component Description: Amount:	WRAL Portion of Osborn Invoice 28274. REVISED \$14,745.14

Component Description: Amount:	WRAL Portion of Osborn Invoice 27327 Revised with receipts now attached. \$7,741.53
Component Description: Amount:	Fifth invoice (Pay app) in construction project \$50,216.16
Component Description:	First invoice (Pay app) in construction project
Amount: Component Description:	\$254,945.60 REVISED WRAL portion of the
	BeckTV invoice 10351 for new building infrastructure equipment.
Amount:	\$17,076.83
Component Description:	Second invoice (Pay app) in construction project
Amount:	\$70,087.95
Component Description:	WRAL Portion of Osborn Invoice 27175 revised with invoices.
Amount:	\$7,563.72

	Component Description: Amount:	REVISED -Ross Video Limited invoice for new transmitter ASI feed. \$3,668.80
	Component Description: Amount:	WRAL Portion of Osborn Invoice 28690 \$20,320.01
	Component Description:	WRAL portion of
	Amount:	Osborn invoice 27628 \$1,267.64
	Component Description: Amount:	Fourth invoice (Pay app) in construction project \$70,326.24
	Component Description: Amount:	Third invoice (Pay app) in construction project \$111,204.90
Spare Modules and Power supplies	Information not provided.	
System installation	Information not provided.	
15 Ton system	Information not provided.	
4" Rigid Conduit and Wiring (Cost per foot)	Information not provided.	
Transformer 3 phase/480v - 300 KVA	Information not provided.	

UHF - Liquid Cooled Solid State Transmitter 76.0 kW	Component Description:	Final payment for transmitter, installation and freight charges for WRAL main transmitter.
	Amount:	\$106,461.97
	Component Description:	50% down for transmitter
	Amount:	\$1,053,306.70
	Component Description:	Gates second invoice - includes RF system and electrical
	Amount:	(transformer) \$1,052,564.98
RF System	Information not provided.	

Antennas

Cost Information

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification		Actual Cost Justification
Primary Antenna ATW25H4- ETO-17H	\$310,130.00	\$294,600.00		\$236,125.00	
Elbow complex, single channel, at antenna input, per 7 3/16. feedline (if needed)	\$13,900.00	\$13,200.00	N/A	\$0.00	N/A
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	\$6,250.00	N/A
UHF - High Power Top Mount (200-1000 kW), One station antenna , elliptically or circularly polarized	\$289,500.00	\$275,000.00	N/A	\$229,875.00	N/A
Auxiliary Antenna ATW25H3- ESO-15/17H	\$275,790.00	\$267,000.00		\$176,145.89	

New combiner, cost per channel (without antenna)	\$84,200.00	\$95,000.00	Interim (AUX) antenna will support full power from each station (WRAL and WRAZ) requiring larger sized combiner.	\$21,250.00	This is for Both WRAL and WRAZ interim / aux antenna system
Pattern scatter analysis for side mount high/med power antennas (if not included in antenna base cost)	\$5,260.00	\$2,500.00	1/2 split with WRAZ	N/A	N/A
Side mount brackets for high power antennas (if not included in antenna base cost)	\$23,150.00	\$11,000.00	1/2 split with WRAZ	\$7,425.00	This Covers both WRA and WRA combined AUX system
Elbow complex, broadband, at antenna input, per 8 3/16. feedline (if needed)	\$18,950.00	\$17,800.00	This antenna is a "combined antenna" the other 1 /2 of the cost is shared with WRAZ	\$17,737.04	N/A
Sweep test of existing antenna	\$6,730.00	\$3,200.00	1/2 split with WRAZ	N/A	N/A

UHF - High Power, Side Mount, basic slot antenna, 805 kW input, elliptically or circularly polarized	\$137,500.00	\$137,500.00	This antenna is a "combined antenna" the other 1 /2 of the cost is shared with WRAZ	\$129,733.85	This covers cost for both WRAL and WRAZ AUX combined antenna ststem
Sub-total	\$585,920.00	\$561,600.00	N/A	\$412,270.89	N/A
Total for all systems	\$6,496,452.65	\$6,034,989.65	N/A	\$5,263,243.83	N/A

Actual Information Description	File Name			
Elbow complex, single channel, at antenna input, per 7 3/16. feedline (if needed)	Information not provided.			
Sweep test of existing antenna	Component Description: Amount:	Final payment (15%) for System Sweep \$937.50		
	Component Description:	85% initial payment - System Sweep		
	Amount:	\$5,312.50		

UHF - High Power Top Mount (200-1000 kW), One station antenna , elliptically or circularly polarized	Component Description: Amount:	Final payment (15%) for Primary Antenna - ATW25H4-ETO- 17H \$34,481.25
	Component Description: Amount:	85% initial Payment WRAL Main Antenna \$195,393.75
New combiner, cost per channel (without antenna)	Component Description: Amount:	WRAL portion of the final 15% due for the WRAL /WRAZ Aux combiner. \$3,187.50
	Component Description: Amount:	1/2 of 85% Initial Payment - Combiner for WRAL and WRAZ \$18,062.50
Pattern scatter analysis for side mount high/med power antennas (if not included in antenna base cost)	Information not provided.	

Side mount brackets for high power antennas (if not included in antenna base	Component Description:	WRAL portion of the WRAL/WRAZ
cost)		Aux Antenna Leg
		Mount Bracket. Final 15%
	Amount:	\$1,113.75
	Component Description:	1/2 of 85% Initial Payment - Leg
		mount bracket set WRAL and WRAZ
	Amount:	Combined AUX
	Anount.	\$6,311.25
Elbow complex, broadband, at antenna input, per 8 3/16.		
feedline (if needed)	Component Description:	Corrected Amount - 50% split
		between WRAL
		and WRAZ for ERI Invoice 53331
	Amount:	\$17,737.04
Sweep test of existing antenna	Information not provided.	
UHF - High Power, Side		
Mount, basic slot antenna, 805 kW input, elliptically or	Component Description:	WRAL portion of the final 15% due
circularly polarized		for the WRAL
		/WRAZ Aux
		antenna plus freight.
	Amount:	\$24,599.47
	Component Description:	1/2 of 85% Initial
	component Description.	Payment -
		Combined WRAL
		/WRAZ Side mount AUX
		mount AUX
		Antenna

Transmission Line

Cost Information

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justificatio
Primary Transmission Line	\$641,995.65	\$641,995.65		\$635,594.36	
2 Wall feed through units	\$703.80	\$703.80	No Predetermined Cost Estimate	\$703.80	N/A
Rigid Transmission Line - copper, 7 3 /16"	\$640,900.00	\$640,900.00	N/A	\$634,498.71	N/A
Gas Barrier	\$391.85	\$391.85	No Predetermined cost estimate	\$391.85	N/A
Auxiliary Transmission Line	\$803,187.00	\$381,000.00		\$259,449.05	
Rigid Transmission Line - copper, 8 3 /16" broadband	\$803,187.00	\$381,000.00	This represents 1 /2. WRAZ will cover the other 1/2	\$259,449.05	This covers both WRAL main and the WRAL /WRAZ combined AUX antenna systems
Sub-total	\$1,445,182.65	\$1,022,995.65	N/A	\$895,043.41	N/A
Total for all systems	\$6,496,452.65	\$6,034,989.65	N/A	\$5,263,243.83	N/A

Components

Actual Information	
Description	

File Name

Rigid Transmission Line -	
copper, 7 3/16" Component Description:	: Final payment (15%) for Transmission Line
Amount:	system \$84,062.14
Component Description:	: Final payment (15%) for Sahara Dehydrator
Amount:	\$1,398.68
Component Description:	(15%) for TX line system design and
Amount:	drawings \$1,631.25
Component Description:	ERI Invoice WRAL- 53483 Balance due and freight for proposal 20190130-528
Amount:	\$29,194.50
Component Description:	ERI Invoice WRAL- 3000 50% deposit with order for Proposal 20190131-528
Amount:	\$24,690.37

	Component Description: Amount:	85% initial payment - TX Line System design and drawings \$9,243.75
	Component Description:	85% initial payment - Transmission Line for WRAL
	Amount:	\$476,352.20
	Component Description:	85% initial payment - Sahara TX Line Dehydrator - WRAL Main line
	Amount:	\$7,925.82
Gas Barrier	Component Description:	Full payment for gas Barrier 7-3/16"
	Amount:	75 Ohm \$391.85
Rigid Transmission Line - copper, 8 3/16" broadband	Component Description:	WRAL portion of the extra cut piece of transmission line for the WRAL /WRAZ Aux. transmission line.
	Amount:	Full payment. \$1,021.28

Component Description: Amount:	WRAL portion of the WRAL/WRAZ Aux Transmission Line Dehydrator after discount. Final payment. \$394.09
Component Description:	WRAL portion of the WRAL/WRAZ Aux Transmission Line System plus freight. Final 15% payment.
Amount:	\$42,469.20
Component Description:	1/2 of 85% initial payment - TX Line for Combined WRAL WRAZ AUX Antenna
Amount:	system \$206,396.21
Component Description:	1/2 of ERI invoice
Amount:	54459 \$5,205.36
Component Description:	1/2 of 85% initial
	payment - Sahara TX line dehydrator - AUX combined system WRAL and WRAZ
Amount:	\$3,962.91

Tower Equipment and Rigging Costs

Cost Information

	Predetermined	Estimated	Estimated Cost		Actual Cost
Description	Cost Estimate	Cost	Justification	Actual Cost	Justification
Primary Tower TOWER	\$967,300.00	\$1,183,091.00		\$931,207.54	
Tower Helicopter Lift	\$343,300.00	\$343,300.00	No predetermined cost available.	\$309,695.00	N/A
Structural engineering tower load study for a documented tower with candelabra	\$20,000.00	\$19,000.00	N/A	\$4,750.00	N/A
Minor tower reinforcement /modifications	\$158,000.00	\$158,000.00	N/A	N/A	N/A
Relocate ENG Dish	\$25,000.00	\$25,000.00	This is 1/2 of the cost - other half will be covered by WRAZ	N/A	N/A
Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	\$421,000.00	\$637,791.00	Estimated cost is \$216,791.00 over predetermined cost estimate due to unexpected rigging cost and overages for antenna installation.	\$616,762.54	N/A
Sub-total	\$967,300.00	\$1,183,091.00	N/A	\$931,207.54	N/A

Total for all	\$6,496,452.65	\$6,034,989.65	N/A	\$5,263,243.83	N/A
systems					

Actual Information	File Name	
Fower Helicopter Lift		
	Component Description:	WRAL Old antenna removal and new antenna
		placement via helicopter. 40% payment prior to
	Amount:	mobilization. \$134,420.00
	Component Description:	WRAL portion of James River invoice 2002 for Helicopter landing pad.
	Amount:	\$7,250.00
	Component Description:	WRAL Old
		antenna removal and new antenna placement via
		helicopter. 50% deposit with order.
	Amount:	\$168,025.00
Structural engineering tower load study for a documented		
tower with candelabra	Component Description:	WRAL portion of ERI Invoice 52341. Remainder
		of invoice charged to WRAZ
	Amount:	\$4,750.00
Minor tower reinforcement /modifications	Information not provided.	

Relocate ENG Dish	Information not provided.	
Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	Component Description:	WRAL antenna installation and rigging costs. 40% payment prior to
	Amount:	mobilization. \$84,110.00
	Component Description:	WRAL 50% of invoice for
	Amount:	balance due. \$61,870.00
	Component Description:	WRAL 50% deposit with order for tower installation
	Amount:	services \$61,870.00
	Component Description:	WRAL portion of invoice WRAL- 5000 for 50% with order. Remainder of Invoice charged to WRAZ
	Amount:	\$84,505.32
	Component Description:	WRAL portion of ERI Invoice WRAL-54736
	Amount:	\$35,686.87
	Component Description:	WRAL Portion of ERI invoice WRAL-53700. Remainder of invoice charged to
		WRAZ.

Component Description: Amount:	WRAL portion of ERI Invoice WRAL-53914. Remainder of invoice charged to WRAZ \$16,901.07
Component Description:	Tower Plumb and Tension cost. Total amount of \$46,500.00 is split between WRAL and WRAZ
Amount:	\$23,250.00
Component Description: Amount:	WRAL antenna installation and rigging costs. 50% deposit with order. \$105,137.50
Component Description:	WRAL Portion of ERI Invoice WRAL-5000A. Remaining invoice amount charged to WRAZ \$67,604.25
Component Description:	ERI Invoice 54380 for extra tower work and weather
	day.

Outside Professional Services

Cost Information

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justificatio
Outside Professional Services	\$190,490.00	\$100,550.00		\$42,066.66	
Legal Guidance for repack	\$9,000.00	\$9,000.00	N/A	\$8,827.38	N/A
Additional Field Engineering Service, 3 Days	\$6,500.00	\$6,500.00	Estimating \$2000 per day for an independent verification of the new transmission systems	\$6,500.00	N/A
RF Exposure Measurements	\$21,050.00	\$2,500.00	N/A	N/A	N/A
Comprehensive coverage verification via field study, if needed	\$84,200.00	\$20,000.00	N/A	N/A	N/A
ASR modification (prepare FCC Form 854)	\$2,105.00	\$500.00	N/A	\$500.00	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main), License to Cover Application	\$2,365.00	\$2,250.00	N/A	N/A	N/A

Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	\$4,210.00	\$4,000.00	N/A	N/A	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	\$5,260.00	\$5,000.00	N/A	N/A	N/A
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, License to Cover Application	\$1,580.00	\$1,500.00	N/A	N/A	N/A
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	\$1,580.00	\$1,500.00	N/A	N/A	N/A
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, Construction Permit Application	\$2,105.00	\$2,000.00	N/A	\$625.00	N/A

Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	\$3,155.00	\$3,000.00	N/A	\$1,750.00	N/A
Perform engineering study for new channel assignment and antenna development	\$7,360.00	\$7,000.00	N/A	N/A	N/A
Address transition timing and coordination issues w/ other stations and wireless	\$2,630.00	\$2,500.00	N/A	N/A	N/A
Prepare and or review reimbursement form	\$2,630.00	\$2,500.00	N/A	N/A	N/A
Project management of the transition	\$34,760.00	\$30,800.00	Estimate consists of an average of 20hrs per month Jan - Nov 2019	\$23,864.28	N/A
Sub-total	\$190,490.00	\$100,550.00	N/A	\$42,066.66	N/A
Total for all systems	\$6,496,452.65	\$6,034,989.65	N/A	\$5,263,243.83	N/A

Actual Information Description	File Name
Legal Guidance for repack	

Component Description:	1/2 of Wilkinson, Barker, Knauer, LLP invoice Legal guidance for Incentive Auction /Repack \$1,977.50
Component Description:	1/2 of Wilkinson, Barker, Knauer, LLP invoice Legal guidance for Incentive Auction /Repack \$987.75
Component Description:	1/2 of Wilkinson, Barker, Knauer, LLP invoice Legal guidance for Incentive Auction /Repack \$2,240.13
Component Description:	1/2 of Wilkinson, Barker, Knauer, LLP invoice Legal guidance for Incentive Auction /Repack \$286.50
Component Description:	1/2 of Wilkinson, Barker, Knauer, LLP invoice Legal guidance for Incentive Auction /Repack \$321.50

	Component Description: Amount:	1/2 of Wilkinson, Barker, Knauer, LLP invoice for legal guidance for Incentive Auction /Repack. \$291.00
	Component Description:	WRAL portion of Wilkinson, Barke Knauer, LLP invoice Legal guidance for Incentive Auction /Repack \$2,723.00
Additional Field Engineering Service, 3 Days	Component Description:	Final payment (15%) for site survey by 2 ERI Climbers
	Amount: Component Description:	\$975.00 TX Layout Site Survey - 2 Certified ERI
	Amount:	Climbers \$5,525.00
RF Exposure Measurements	Information not provided.	
Comprehensive coverage verification via field study, if needed	Information not provided.	
ASR modification (prepare	Component Description:	RF Engineering ·
FCC Form 854)		FAA filing to update frequency

Attorney Fees -Prepare and File FCC Form 2100 (main), License to Cover Application	Information not provided.	
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	Information not provided.	
Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	Information not provided.	
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, License to Cover Application	Information not provided.	
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	Information not provided.	
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, Construction Permit Application	Component Description:	RF Engineering - application for license to cover Aux. constructior permit.
	Amount:	\$625.00

Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	Component Description: Amount:	RF Consultant fees for modification of construction permit to reduce ERP. \$1,500.00
	Component Description: Amount:	RF Consultant fees for application for license to cover construction permit for main antenna. \$250.00
Perform engineering study for new channel assignment and antenna development	Information not provided.	
Address transition timing and coordination issues w/ other stations and wireless	Information not provided.	
Prepare and or review reimbursement form	Information not provided.	
Project management of the transition	Component Description: Amount:	Project Management Services for February 2019 \$1,890.00
	Component Description:	Project Management Services for September 2019
	Amount:	\$1,610.00

Component Description:	Project Management Services for
Amount:	January 2019 \$1,540.00
Component Description:	Project Management Services for July
Amount:	2019 \$3,424.28
Component Description:	Project Management Services for May 2019
Amount:	\$4,585.00
Component Description:	Project Management Services for June 2019
Amount:	\$4,480.00
Component Description:	Project Management Services for March
Amount:	2019 \$980.00
Component Description: Amount:	April invoice \$5,355.00

Other Expenses

Cost Information

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cos Justificatio
Other Expenses	\$59,585.00	\$51,775.00		\$8,092.09	
Facilty remote control and monitoing modifications	\$15,000.00	\$15,000.00	Facility remote control and monitoring modifications	N/A	N/A
Develop and air announcement of upcoming channel change	\$10,000.00	\$10,000.00	N/A	N/A	N/A
Equipment Delivery and Handling Charges	\$4,600.00	\$4,600.00	No Predetermined Cost Estimate	\$259.84	N/A
Disposal Costs (for equipment and other waste, net of any salvage value)	\$10,000.00	\$10,000.00	N/A	\$1,991.10	N/A
DTV Medical Facility Notification	\$11,550.00	\$3,750.00	N/A	N/A	N/A
FCC Filing Fees - Form 2100 license to cover application	\$335.00	\$325.00	N/A	N/A	N/A

Local Zoning	\$5,850.00	\$5,850.00	Wake County NC Commercial Building Permit for New Building Addition.	\$5,841.15	N/A
Non-zoning permits	\$1,000.00	\$1,000.00	N/A	N/A	N/A
MVPD Notification of Channel Change	\$1,250.00	\$1,250.00	N/A	N/A	N/A
Sub-total	\$59,585.00	\$51,775.00	N/A	\$8,092.09	N/A
Total for all systems	\$6,496,452.65	\$6,034,989.65	N/A	\$5,263,243.83	N/A

Actual Information Description	File Name	
Facilty remote control and monitoing modifications	Information not provided.	
Develop and air announcement of upcoming channel change	Information not provided.	
Equipment Delivery and Handling Charges	Component Description: Amount:	Freight expense from BeckTV. Invoice 10404 \$259.84

Disposal Costs (for equipment and other waste, net of any salvage value)	Component Description:	12-9-19 - Jame River Invoice 1930 for waste dumpster removal and return.
	Amount:	\$1,126.00
	Component Description:	12-9-19 - Jame River Invoice 1945 for waste dumpster removal and return.
	Amount:	\$865.10
DTV Medical Facility Notification	Information not provided.	
FCC Filing Fees - Form 2100 license to cover application	Information not provided.	
Local Zoning	Component Description:	WRAL Portion of the Building Permit expense for the new
	Amount:	transmitter building additior \$5,841.15
Non-zoning permits	Information not provided.	
MVPD Notification of Channel Change	Information not provided.	

Cost Information	Grand Total				
		Predetermined Cost Estimate	Estimated Cost	Actual Cost	
	Total for all systems	\$6,496,452.65	\$6,034,989.65	\$5,263,243.83	

Reimbursem	entestiatus	Response
	The facility has ceased operating on its pre- auction channel.	Yes
	Construction of final facilities or all necessary modifications are complete.	No
	All receipts for reimbursement have been submitted no further costs are expected to be incurred. Note this will lock the Form 399 from further editing and begin close-out procedures with the Fund Administrator.	No

Certification	Section	Question	Response
	Submission of Estimated Expenses Statements	WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a) (1), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503), AND ANY FALSE STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT.	
		 The Authorized Person signing below certifies that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity. The above-named 	
		entity acknowledges that all certifications and attached documentation are considered material representations.	
		3. The above-named entity acknowledges the submission of the information herein creates no obligation on the part of the government to pay any amount.	

- 4. The above-named entity certifies that the equipment and services paid for with money from the TV Broadcaster Relocation Fund are necessary to change channels (broadcasters) or to continue to carry the signal of a broadcaster that changes channels (MVPD).
- The above-named entity certifies that all payments from the TV Broadcaster Relocation Fund (Fund) received by the entity listed on this form will be used only for expenses that are eligible for reimbursement from the Fund.
- 6. The above-named entity certifies that it will maintain and provide to the Commission detailed records, including receipts, of all costs eligible for reimbursement actually incurred.
- 7. The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission.

8. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a pre-requisite for obtaining the payments herein requested.	
I declare, under penalty of perjury, that I am an authorized representative of the above- named applicant for the Authorization(s) specified above.	Craig Stephen Turner Project Engineer

Certification	Section	Question	Response
	Submission of Actual Cost Documentation Statements	WILLFUL FALSE, FRAUDULENT, OR FICTITIOUS STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISIONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a) (1), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503), AND ANY FALSE AND/OR FRAUDULENT STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT (U.S. CODE, TITLE 31, SECTIONS 3729-3733).	
		 The Authorized Person signing below certifies and represents that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity. 	
		2. The above-named entity certifies that the statements in this form and attached documentation are true, complete, and correct.	
		3. The above-named entity acknowledges that all certifications and attached documentation are considered material representations.	

- 4. The above-named entity acknowledges the submission of the information herein creates no obligation on the part of the government to pay any amount.
- 5. The above-named entity certifies that the equipment and services paid for with money from the TV Broadcaster **Relocation Fund are** necessary to change channels (full power and Class A stations) and/or otherwise modify a television station's facility as a result of the spectrum repack (LPTV/TV Translator stations); or to minimize service disruption resulting from a repacked television station (FM stations); or to continue to carry the signal of a broadcaster that changes channels (MVPD).
- The above-named entity certifies that all payments from the TV Broadcaster Relocation Fund (Fund) received by the entity listed on this form will be used only for expenses that are eligible for reimbursement from the Fund.
- 7. The above-named entity certifies that the cost information /documents submitted reflect costs actually incurred.

	8. The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission.	
	9. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a prerequisite for obtaining the payments herein requested.	
an nar	eclare, under penalty of perjury, that I am authorized representative of the above- ned applicant for the Authorization(s) ecified above.	Craig Stephen Turner Project Engineer

Attachments

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